

UTILITY
PATENT APPLICATION
TRANSMITTAL

Only for new nonprovisional applications under 37 CFR 1.3(b)

Attorney Docket No. 204936US0

First Inventor or Application Identifier Teruaki TAJI, et al.

Title A METHOD FOR PROVIDING A PROPERTY OF STRESS-RESISTANCE

Assignee Name: Ajinomoto Co., Inc.

Assignee Address: 15-1, Kyobashi 1-chome, Chuo-ku, Tokyo 104-8315 Japan

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents

1. Fee Transmittal Form (e.g. PTO/SB/17)
(Submit an original and a duplicate for fee processing)

2. Specification

Total Sheets **36**

3. Drawing(s) (35 U.S.C. 113) Total Sheets **6**

4. Oath or Declaration Total Pages

a. Newly executed (original or copy)
b. Copy from a prior application (37 C.F.R. §1.63(d))
(for continuation / divisional w/ box 17 completed)
i. DELETION OF INVENTOR(S)
Signed statement attached deleting inventor(s) named in
the prior application, see 37 C.F.R. §1.63(d)(2) and
1.33(b).

5. CD-ROM or CD-R in duplicate, large table or Computer
Program (Appendix)

6. Nucleotide and/or Amino Acid Sequence Submission
(if applicable, all necessary)

a. Computer Readable Form (CRF)

b. Specification or Sequence Listing on:

i. CD-ROM or CD-R (2 copies); or

ii. Paper

c. Statements verifying identity of above copies

ADDRESS TO: Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

ACCOMPANYING APPLICATION PARTS

7. Assignment Papers (cover sheet & document(s))
8. Application Data Sheet. See 37 CFR 1.76
9. 37 C.F.R. §3.73(b) Statement *(when there is an assignee)* Power of Attorney
10. English Translation Document (if applicable)
11. Information Disclosure Statement (IDS)/PTO-1449 Copies of IDS
Citations
12. Preliminary Amendment
13. White Advance Serial No. Postcard
14. Certified Copy of Priority Document(s)
(if foreign priority is claimed)
15. Applicant claims small entity status.
See 37 CFR 1.27
16. Other: Notice of Priority, List of Inventors' Names
and Addresses, Statement Re Filing in
Foreign Language

17. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below:

Continuation Divisional Continuation-in-part (CIP) of prior application no.:

Prior application information: Examiner:

Group Art Unit:

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

18. Amend the specification by inserting before the first line the sentence:

This application is a Continuation Division Continuation-in-part (CIP)
of application Serial No. Filed on

Which was published in English

Which was not published in English

This application claims priority of provisional application Serial No.

Filed

19. CORRESPONDENCE ADDRESS



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Name:	Norman F. Oblon	Registration No.:	24,618
Signature:		Date:	3/19/01
Name:	C. Irvin McClelland	Registration No.:	

Registration Number 21,124

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR(S) Teruaki TAJI, et al.

SERIAL NO: New Application

FILING DATE: Herewith

FOR: A METHOD FOR PROVIDING A PROPERTY OF STRESS-RESISTANCE

FEE TRANSMITTAL

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

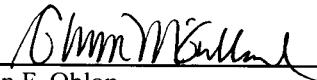
FOR	NUMBER FILED	NUMBER EXTRA	RATE	CALCULATIONS
TOTAL CLAIMS	9 - 20 =	0	× \$18 =	\$0.00
INDEPENDENT CLAIMS	5 - 3 =	2	× \$80 =	\$160.00
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIMS (If applicable)			+ \$270 =	\$0.00
<input checked="" type="checkbox"/> LATE FILING OF DECLARATION			+ \$130 =	\$130.00
				BASIC FEE
				\$710.00
				TOTAL OF ABOVE CALCULATIONS
				\$1,000.00
<input type="checkbox"/> REDUCTION BY 50% FOR FILING BY SMALL ENTITY				\$0.00
<input checked="" type="checkbox"/> FILING IN NON-ENGLISH LANGUAGE			+ \$130 =	\$130.00
<input type="checkbox"/> RECORDATION OF ASSIGNMENT			+ \$40 =	\$0.00
				TOTAL
				\$1,130.00

Please charge Deposit Account No. 15-0030 in the amount of A duplicate copy of this sheet is enclosed.

A check in the amount of **\$1,130.00** to cover the filing fee is enclosed.

The Commissioner is hereby authorized to charge any additional fees which may be required for the papers being filed herewith and for which no check is enclosed herewith, or credit any overpayment to Deposit Account No. 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully Submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.Norman F. Oblon
Registration No. 24,618C. Irvin McClelland
Registration Number 21,124Date: 3/19/01**22850**Tel. (703) 413-3000
Fax. (703) 413-2220
(OSMMN 10/00)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Teruaki TAJI, et al.

FILING DATE: Herewith

FOR: A METHOD FOR PROVIDING A PROPERTY OF STRESS-RESISTANCE

LIST OF INVENTORS' NAMES AND ADDRESSES

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

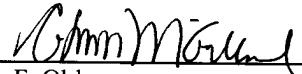
Listed below are the names and addresses of the inventors for the above-identified patent application.

Teruaki TAJI	Tsukuba-shi, Japan
Kazuo SHINOZAKI	Tsukuba-shi, Japan
Chieko OHSUMI	Kawasaki-shi, Japan

A declaration containing all the necessary information will be submitted at a later date.

Respectfully Submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Norman F. Oblon
Registration No. 24,618

**C. Irvin McClelland
Registration Number 21,124**

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Docket No. 204936US0

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Teruaki TAJI, et al.

SERIAL NO. NEW APPLICATION

FILING DATE: HEREWITH

FOR: A METHOD FOR PROVIDING A PROPERTY OF STRESS-RESISTANCE

STATEMENT RE FILING IN FOREIGN LANGUAGE

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

It is hereby stated that the subject application is being filed in a foreign language, in accordance with the provisions of 37 CFR 1.52(d).

An accurate English translation, and a suitable amendment placing the application and claims thereof into proper

U.S. format if needed, will be filed in due course.

Respectfully Submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Norman F. Oblon
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**C. Irvin McClelland
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(OSMMN 10/98)

Docket No: 204936US0

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF :
Teruaki TAJI et al :
SERIAL NO: 09/810,506 : ATTN: BOX MISSING PART
FILED: March 19, 2001 :
FOR: A METHOD FOR INCREASING STRESS-RESISTANCE TO A PLANT

FILING OF CERTIFIED ENGLISH TRANSLATION UNDER 37 CFR 1.52(d)

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

Responsive to the Notice to File Missing Parts of Application (Form PTO-1533) dated **May 14, 2001** in accordance with the provisions of 37 C.F.R. §1.52(d).

The required fee was paid at the time of filing of the application.

In light of the foregoing, this application is deemed to be in proper condition for examination and such favorable action is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF:

Chieko OHSUMI et al.

SERIAL NO: 09/810,506

FILED: March 19, 2001

FOR: A METHOD FOR INCREASING STRESS-RESISTANCE TO A PLANT

CERTIFICATION OF TRANSLATION

HONORABLE COMMISSIONER OF PATENTS & TRADEMARKS

WASHINGTON, D.C. 20231

SIR:

Kazunori OKAMURA, a translator hereby states:

- (1) that I am fluent in both the Japanese and English languages;
- (2) that I translated the attached document identified as corresponding to U.S.

Application No.09/810,506 filed in the United States on March 19, 2001 from Japanese into
ENGLISH;

- (3) that the attached English translation is a true and correct translation of the document attached thereto to the best of my knowledge and belief; and
- (4) that all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements are made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both under 18 USC 1001, and that such false statements may jeopardize the validity of the application or any patent issuing thereon.

DATE: July 16, 2001

BY: Kazunori Okamura

【書類名】 明細書

【発明の名称】 植物に対するストレス耐性付与方法

【発明の詳細な説明】

【発明の属する技術分野】

本発明は、植物に対して優れた乾燥耐性及び/又は高塩濃度耐性等のストレス耐性を付与することができる植物に対するストレス耐性付与方法に関する。

【従来の技術】

地球上の陸地の約3分の1は乾燥地に属し、今後予想される深刻な食糧不足への対策として乾燥地域の農業利用の重要性が認識されるようになってきた。また、現在の技術では過剰な灌漑水による塩類集積や乾燥や高熱により、農耕に不適な乾燥、半乾燥土壤の全体に占める割合が年々増大しており、この問題解決は急務である（石谷 学 他 植物の化学調節 Vol.25, No.2, 149-162, 1990）。この問題に対する解決法としては、これらの環境ストレスに対する耐性機構を解明し、耐性を持つ植物を作出するという方法が挙げられる。

植物は移動の自由を持たないため、自身が置かれた環境の変化を耐え抜いて成長分化を続けていかなければならない。このため植物は環境の変化に速やかに応答して適応する応答機構を、進化の過程で獲得してきたものと考えられる。植物を取り巻く環境因子のうち乾燥や塩類集積は、陸上植物にとって生死に関わる重要な因子であり、また、植物の生長に大きな影響を与える因子となる。植物は乾燥ストレスを受けると成長が阻害され、細胞は膨圧が低下し種々の生理的過程に影響を受ける（Shinozaki and Yamaguchi-Shinozaki, Plant Physiol. 115:327-334, 1997）。

植物においては、これらのストレスに対して個体レベル、組織レベル及び細胞レベルで種々の応答機構が働き、さらに分子生物学的研究により遺伝子発現レベルでも応答していることが明らかにされた。すなわち、種々の植物で乾燥や塩処理により、mRNA量が増加するストレス誘導性の遺伝子が数多く存在するといった遺伝子発現レベルでの応答機構が明らかとなった。植物は、これらのストレス誘導性遺伝子群の産物のいずれかにより耐性を獲得するものと考えられている。

これらストレス誘導性遺伝子群の発現には、植物ホルモンの一種であるアブシ